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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SUONG-HYU HYON
and MASANORI OKA

Appeal 2010-006736
Application 10/643,673
to reissue U.S. Patent 6,168,626
Technology Center 1700

Before ALLEN R. MacDONALD, MICHAEL P. COLAIANNI, and KEN B. BARRETT, *Administrative Patent Judge*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL[1]

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[1] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the "MAIL DATE" (paper delivery mode) or the "NOTIFICATION DATE" (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

Appellants appeal under 35 U.S.C. § 134 the final rejection of claims 104, 109-111, 139, 149-153, and 164-168 in this divisional reissue application of U.S. Patent 6,168,626 to Suong-Hyu Hyon et al. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

We AFFIRM.

Appellants disclose a method of making ultrahigh molecular weight polyethylene (UHMWPE) articles (Hyon, col. 1, ll. 7-10).

Claims 104 and 139 are illustrative:

> 104. A method for making an ultra high molecular weight polyethylene (UHMWPE) article, for subsequent processing to make an artificial joint, comprising:
>
> (a) crosslinking a raw UHMWPE article slightly with low dose irradiation: and then
>
> (b) heating said irradiated article to a compression deformable temperature between 50°C below the melting point of said article and said melting point;
>
> (c) compression deforming the heated article; and then
>
> (d) cooling the article while maintaining the deformed state.
>
> 139. A method of making a component for an artificial joint comprising ultra high molecular weight polyethylene (UHMWPE), comprising:
>
> (a) crosslinking a raw UHMWPE article slightly with low dose irradiation; and then
>
> (b) heating the irradiated article to a compression deformable temperature by heating at a temperature from its melting point minus 50°C to its melting point;

(c) applying pressure to said irradiated article at a deformation temperature;

(d) heating said irradiated article to a temperature of from around 100°C to 130°C for a period of at least 1 hour; and then

(e) cooling the article while maintaining the deformed state: and then

(f) .processing said article to make said component.

Appellants appeal the following rejections:

1. Claims 104, 109-111, 139, 149-153, and 164-168 are rejected under 35 U.S.C. § 251 as improperly recapturing subject matter surrendered during prosecution of US Patent 6,168,626.
2. Claims 104, 109-111, 139, 149-153, and 164-168 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Zachariades (US Patent 5,030,402, issued Jul. 9, 1991) in view of Kitamaru (US Patent 3,886,056, issued May 27, 1975).

Appellants argue the claims as a group with their arguments primarily directed to claims 104 and 139 (App. Br. 5-31). Therefore, we focus on claims 104 and 139 only in addressing Appellants' arguments.

Rejection (1): Recapture

ISSUE

Did the Examiner err in determining that Appellants' broadening changes in claims 104 and 139 do not avoid the recapture rule by the further change of claims 104 and 139 to recite that the deformation temperature is "between 50°C below the melting point of said article and said melting

point" because such limitation is claimed in 6,168,626 and thus not an additional material limitation directed to overlooked subject matter? We decide this issue in the negative.

PRINCIPLE OF LAW

> Application of the recapture rule is a three-step process. The first step is to "determine whether and in what 'aspect' the reissue claims are broader than the patent claims." "The second step is to determine whether the broader aspects of the reissued claim related to surrendered subject matter." Finally, the court must determine whether the reissued claims were materially narrowed in other aspects to avoid the recapture rule.

Pannu v. Storz Instruments, Inc., 258 F.3d 1366, 1371 (Fed. Cir. 2001) (citations omitted).

The recapture rule may be avoided in a reissue application if the reissue claims are materially narrower than the original claims in other overlooked aspects of the invention. *Hester Indus. Inc. v. Stein Inc.*, 142 F.3d 1472, 1482-83 (Fed. Cir. 1998) (interpreting the "materially narrowed" aspect of the recapture rule as cited in e.g., *In re Clement*, 131 F.3d 1464, 1470 (Fed. Cir. 1997)).

FACTUAL FINDINGS (FF)

We adopt the Examiner's findings of fact on pages 3-5 and 8-13 of the Answer as our own.

ANALYSIS

Appellants argue that claims 104 and 139 do not recapture surrendered subject matter (App. Br. 5). With regard to the first step

summarized by the court in *Pannu* for determining if surrendered subject matter has been recaptured, Appellants either do not contest the Examiner's finding that the claims are broadened in the respects noted on pages 4-5 of the Answer, or Appellants merely concede that the claim limitation rephrases what was previously claimed (App. Br. 8-11).

With regard to the second step summarized by the *Pannu* court, Appellants argue that the broadening or rephrasing of the features is not an attempt to recapture surrendered subject matter because the claims of the divisional reissue are directed to an invention distinct from the invention claimed in the 6,168,626 patent (App. Br. 11). Appellants contend that claims 104 and 139 are derived from claims 229 and 264 which were part of the parent reissue application and were subject to a restriction requirement by the Examiner (App. Br. 13). Appellants contend that the Examiner's restriction evinces that the claims of the divisional reissue application are distinct from the claims of patent 6,168,626 (*id.*).

These arguments are not persuasive because the claims have been amended to include features that are present in claims 3-6 of patent 6,168,626 as explained by the Examiner (Ans. 9). Indeed, Appellants concede that the amended reissue claims of the present divisional reissue application contain limitations not present in the original reissue claims from which they are derived (App. Br. 16). In other words, the claims have been amended so as to cause the Examiner to reevaluate the basis for restriction and to determine that the present claims 104 and 139 are not unrelated to the claims of patent 6,168,626 as was the case with claims 229 and 264 (Ans. 9). We agree.

The Examiner correctly explains that claims 3-6 of patent 6,168,626 contain the subject matter of claims 104 and 139 and that the changes to claims 104 and 139 include subject matter surrendered during prosecution of the patented claims (Ans. 3-5, 9). Therefore, it appears that Appellants are attempting to recapture subject matter surrendered during prosecution of the application that issued as patent 6,168,626.

Regarding the third step of the recapture analysis recited in *Pannu*, Appellants argue that even if the claims are broadened in certain respects, the claims are materially narrowed in other respects so as to avoid the recapture rule (App. Br. 17). Appellants argue that limiting the temperature range for the deformation temperature to be below the melting point of UHMWPE in claims 104 and 139 materially narrows the claims so as to avoid the recapture rule (App. Br. 17-21).

The Examiner responds that adding the limitation that the deformable temperature is between 50°C below the melting point and the melting point does not materially limit the scope of the reissue claims relative to patent claim 5 that recites the deformable temperature is in a range between 50°C lower than the melting temperature of the crosslinked ultra high molecular weight polyethylene to 80°C higher than the melting temperature (Ans. 11). The Examiner further notes that the deformable temperature range claimed in reissue claims 104 and 139 is fully encompassed by claim 5 of patent 6,168,626 (Ans. 9). We agree.

Appellants agree that the range claimed in the divisional reissue is subsumed by the patented claims that recite an overlapping temperature range (App. Br. 19). Because the broadened claims include a portion of the deformable temperature range that was previously prosecuted, the claims of

the divisional application are not directed to an overlooked subject matter and thus, fail to materially narrow the claims relative to the patent claims with regard to an overlooked aspect of Appellants' invention. *Hester Indus. Inc. v. Stein Inc.*, 142 F.3d 1472, 1482-83 (Fed. Cir. 1998). *See also*, *Manual of Patent Examining Procedures (MPEP)*, § 1412.02(V) (8th ed. July 2010) (PTO interpreting *Hester* states, "A limitation that had been prosecuted in the original patent application is not directed to "overlooked aspects" of the disclosed invention and will not overcome the recapture rejection.").

Appellants argue that the temperature range in the reissue claims was neither presented nor prosecuted and thus constitutes an overlooked aspect (Reply Br. 8). However, we, like the Examiner (Ans. 9), note that the temperature range claimed in the reissue application is included in the range claimed in the patented claims 3-6. Therefore, the range claimed in the reissue application was prosecuted as part of the range in the patented claims.

Appellants' arguments regarding whether the temperature range of the reissue claims is "narrower in an aspect unrelated to the rejection" as stated by the court in *Clement* is not necessary for us to reach because the court in *Hester* appears to have construed the meaning of that portion of *Clement* as requiring the reissue claims be "materially narrower in . . . overlooked aspects of the invention." *Hester*, 142 F.3d at 1482-83. Therefore, our analysis above regarding *Hester* addresses these arguments.

For the above reasons, we agree with the Examiner that the changes to the claims enumerated on pages 4-5 of the Answer attempt to recapture surrendered subject matter and violate § 251 and Appellants' attempts to

narrow the reissue claim does not avoid the recapture rule. We affirm the Examiner's rejection of claims 104, 109-111, 139, 149-153, and 164-168 under 35 USC § 251 as improperly attempting to recapture surrendered subject matter.

Rejection (2)

Appellants argue the claims under rejection (2) as a group, of which we select claims 104 and 139 as representative. 37 C.F.R. § 47.31(c)(1)(vii).

ISSUE

Did the Examiner err in determining that the combined teachings of Zachariades and Kitamaru would have rendered obvious the claimed subject matter? We decide this issue in the negative.

PRINCIPLES OF LAW

When assessing the obviousness of claimed subject matter, a court must ask whether the improvement is more than the predictable use of prior art elements according to their established function. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

ADDITIONAL FACTUAL FINDINGS

We adopt the Examiner's findings of fact on pages 6-8 and 13-14 as our own.

ANALYSIS

Appellants argue that there is no apparent rationale for combining Zachariades with Kitamaru other than impermissible hindsight (App. Br.

27). Appellants contend that Zachariades' invention is directed to forming prosthetic materials which are different materials than Kitamaru's films or sheets such that an ordinarily skilled artisan would not have any reason to look to Kitamaru (App. Br. 29-30). Appellants argue that Zachariades teaches to cross-link after molding such that one skilled in the art would not have modified Zachariades process to cross-link before molding (App. Br. 30). Appellants contend that the Examiner has provided no rationale regarding why just one of Kitamaru's features would have been selected to be combined with Zachariades (App. Br. 30).

Contrary to Appellants' arguments, the Examiner's rationale is based on the fact that both Zachariades and Kitamaru teach the same material (UHMWPE) and Kitamaru teaches benefits of improved transparency and excellent dimensional stability at high temperatures by cross-linking before deformation of the UHMWPE (Ans. 7-8). As the Examiner finds, Kitamaru teaches that cross-linking the UHMWPE prior to extending or shaping increases the melting point and the dimensional stability at high temperatures improves (Kitamaru, col. 2, ll. 13-25). Indeed, Kitamaru focuses on cross-linking prior to extending as the reason for providing the improved properties. Accordingly, the art provides the focus on using the cross-linking step prior to molding.

Based on the art's focus on cross-linking prior to molding to improve the properties of the material, using such a technique appears to be nothing more than the predictable use of a prior art element (i.e., cross-linking prior to molding) according to its established function (i.e., to improve material properties such as increase the melting point). *KSR*, 550 U.S. at 417. Appellants disclose that that the oriented (i.e., irradiated to crosslink)

UHMWPE has improved thermal properties such as increased melting point (Hyon, col. 2, ll. 47-55; col. 3, ll. 10-15; col. 7, ll. 4-5). Because Appellants have not shown any error in the Examiner's stated rationale, we are unpersuaded by the argument.

We are unpersuaded by Appellants' argument that Zachariades (artificial joints) and Kitamaru (i.e., films, sheets, fibers) are directed to different products such that one skilled in the art would not have looked to the other reference. As noted, the Examiner relies on the fact that both references teach using UHMWPE as a reason for combining the teachings. Moreover, Zachariades teaches forming UHMWPE structures with "reduced thicknesses" or a "thinner load" having enhanced mechanical properties (col. 2, ll. 39-68; col. 3, ll. 45-49). The Examiner finds that Zachariades' acetabular cup is a thin structure such as a film or sheet (Ans. 14). Appellants do not respond to this finding. Accordingly, Appellants have not shown error in the Examiner's finding that the structures of Zachariades and Kitamaru are structurally similar.

Appellants' argument that there is no reason to modify Zachariades' process that teaches cross-linking after molding to use Kitamaru's teachings improperly attacks the references individually instead of looking at the teachings of the references as a whole. For the reasons noted above, Kitamaru provides the reason for modifying Zachariades to cross-link before extending: to provide UHMWPE articles with improved dimensional stability and transparency at high temperatures.

Regarding claim 139, Appellants argue that the prior art fails to teach further processing to make a final product after deforming and cooling the UHMWPE (App. Br. 31). However, Zachariades teaches that the deformed

UHMWPE can used as a precursor which is machined into a final product as explained by the Examiner and that post-processing (i.e., after molding) includes cutting off the excess by, for example, stamping (Ans. 14; col. 4, ll. 15-18) and thus meet the claimed features. Appellants do not dispute these findings.

For the above reasons, we affirm the Examiner's § 103 rejection of claims 104, 109-111, 139, 149-153, and 164-168 over Zachariades in view of Kitamaru.

DECISION

The Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(2010).

ORDER

AFFIRMED

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